

PortMaster 25

Livingston PortMaster 25 Communications Server High-Density Dial-Up Connectivity.

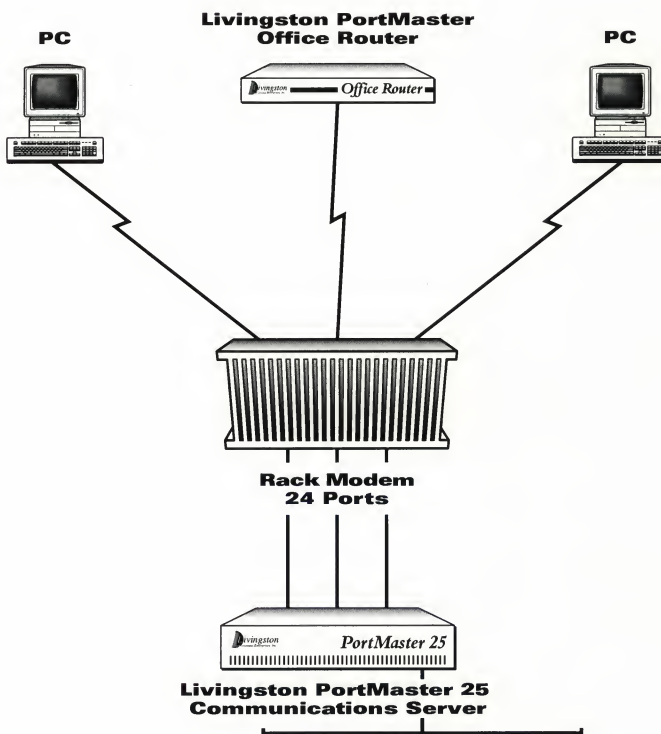


Low-Cost Access for Large, Dispersed Groups

The new PortMaster™ 25 is the least expensive way for corporations and Internet Service Providers to provide access for large groups of people over standard telephone lines. Compact and rack-mountable, the PortMaster 25 features 25 high-speed asynchronous ports. Three high-density connectors — one for each eight ports — allow direct connection to “modem racks” such as the USRobotics Total Control chassis. The 25th port is a console port, which can also be used as a dial-up port.

Although half the size of Livingston's popular PortMaster 2E multiprotocol communications server, the PortMaster 25 offers the same features and employs the same proven high-speed architecture. It also includes Livingston's RADIUS (Remote Authentication Dial In User Service) protocol, which provides centralized security with advanced authentication, authorization and accounting functions.

Livingston PMconsole™ administration software with its graphical user interface makes the PortMaster 25 easy to configure and maintain. It can also be managed using commercial SNMP systems.



Another
piece of
Livingston's
total
remote
access
solution.

Total Access. Sure and Simple™. PortMaster 25 Communications Server

SPECIFICATIONS

GENERAL

Flash memory
Local or network booting
SNMP (MIB 2)
Reverse Telnet
Ping utility
Traceroute utility
IPX SAP Filtering
Multi-line load balancing
Alternate tftp boot via network
Domain name service or network information service
Single or multiprotocol support selectable on each port
Novell keep alive spoofing
PPP auto detect
Session idle timers
Clear channel TCP

SUPPORTED PROTOCOLS

TCP, IP, IPX, SPX, SAP, RIP, SLIP, CSLIP, ICMP,
UDP, ARP, Telnet, Rlogin, PPP (fully compliant: RFC 1331,
RFC 1332, RFC 1334, RFC 1618; backward compatible:
RFC 1171, RFC 1172.)

ROUTING SUPPORT

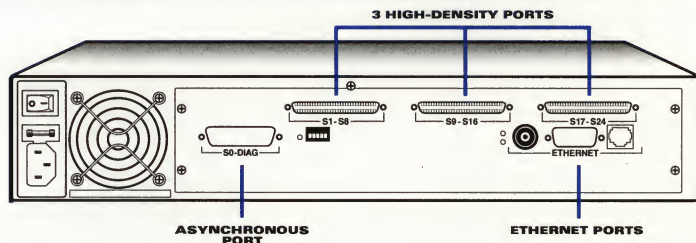
Concurrent TCP/IP and Novell IPX routing
On-demand dial-up routing
Unnumbered WAN links for TCP/IP
Static routes
On-demand, continuous connection, and manual/scheduled dialing
Dial connections support "chat scripts"
Dynamic routing using RIP for IP and IPX
RIP support on a per-interface basis
Static routing applied if interface goes up/down
Trusted router RIP filtering
Support for IP host, subnet, and network routes
Automatic packet queuing and redial
Proxy ARP

SECURITY

Local username/password database
Dialback
PAP and CHAP authentication
Inbound/outbound IP and IPX packet filters
Packet logging to centralized host
Central authentication via RADIUS protocol
Per user authorization filters (source address, destination address,
protocol, protocol service (Web, e-mail, ftp), status of connection)
User accounting (audit trails)

ASYNCHRONOUS PORT SUPPORT

LAN-to-LAN dial-on-demand routing
Concurrent TCP/IP and Novell IPX dial-in
Standard dial-up phone lines (using V.32bis and V.34 modems)
ISDN (with external terminal adapter)



Back panel of LIVINGSTON PORTMASTER 25 COMMUNICATIONS SERVER with three high-density ports, one asynchronous and one ethernet port.

HARDWARE

One Ethernet port with three selectable interfaces:
Built-in 10BaseT transceiver (twisted pair)
Built-in 10Base2 transceiver (thin Ethernet)
AUI connector
24 asynchronous serial ports (eight per connector)
Three high-density connectors
Up to 115.2 Kbps
RS-423/232 interface
DTR, DSR, DCD, RTS, CTS, TXD, RXD
Choice of USRobotics high-density cable or optional DB-25 fan-out cable
One asynchronous serial console port
Up to 115.2 Kbps
RS-432/232 interface
DB-25 connector
DTR, DSR, DCD, RTS, CTS, TXD, RXD signalling
Dimensions
Length: 11.5 in (29.2 cm)
Width: 16.8 in (42.7 cm)
Height: 3.2 in (8.1 cm)
Weight: 12.9 lb (5.9 kg)
Power Requirements
110 VAC $\pm 10\%$, 47-63 Hz
240 VAC $\pm 10\%$, 47-63 Hz
Environmental Operating Range
Temperature: 41F to 113F, 5C to 45C
Humidity: 20% to 80%
Agency Approvals
FCC, UL, CSA
Rack mount kit included



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PortMaster 2 & 2R

Livingston Dial-In/Dial-Out Communications Servers Versatile And Secure Network Connectivity.



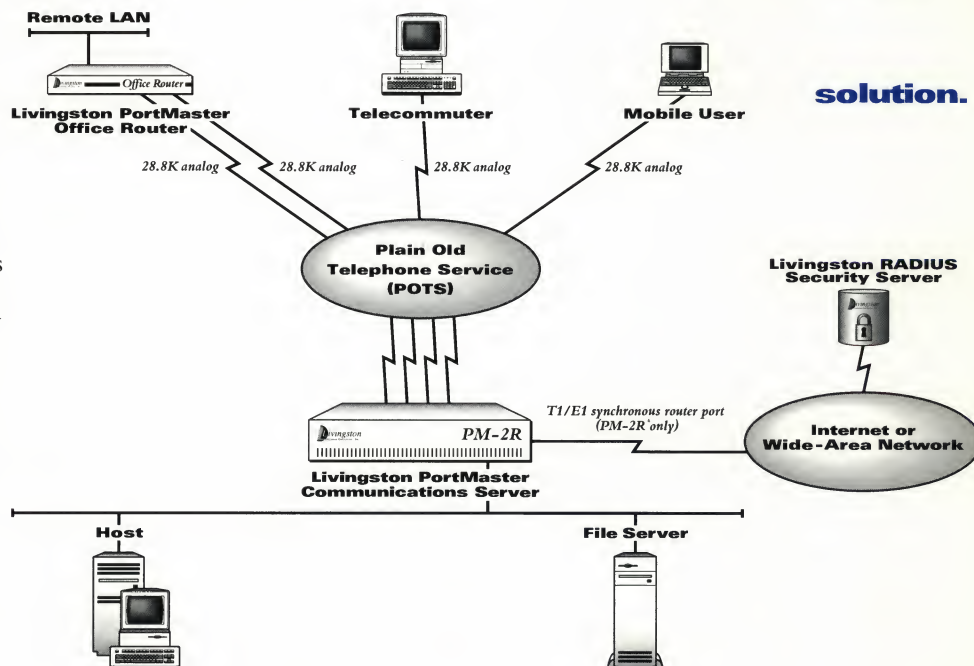
Low-Cost Access for Small and Growing Companies.

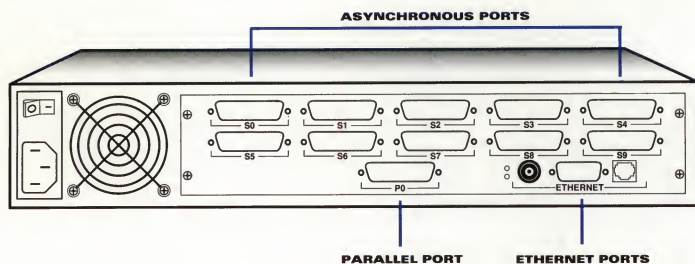
For small corporations needing secure remote access, Livingston offers two fixed configurations of the popular PortMaster™ Communications Server. The PortMaster 2 is an easy, low-cost way for even the smallest company to provide dial-in access to internal network resources and the Internet for employees traveling or working at home. This fixed-configuration 10-port communications server also allows internal network users to share dial-out modems for access to the Internet or bulletin boards. And it supports LAN-to-LAN dial-up routing.

The PortMaster 2R offers the same 10-port configuration and adds an integrated T1/E1 synchronous routing port for a leased-line or Frame Relay connection to a WAN backbone or to an Internet Service Provider. It is ideal for information service providers or corporations needing an economical solution for dial-in points of presence (POPs).

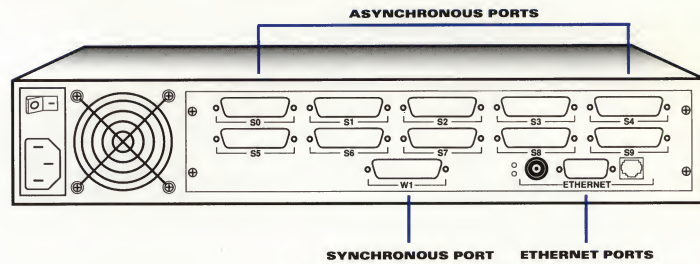
The PortMaster 2 and PortMaster 2R run Livingston's reliable ComOS™ operating system software, the most efficient remote access platform available. They also include firewall security features and Livingston-invented RADIUS (Remote Authentication Dial In User Service) protocol. Livingston's PMconsole™ graphical administration software makes configuration easy.

Another
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Back panel of the **LIVINGSTON PORTMASTER 2** fixed-configuration communications server with 10 asynchronous ports, an Ethernet port and a parallel port.



Back panel of the **LIVINGSTON PORTMASTER 2R** with 10 asynchronous ports, an Ethernet port, and a T1/E1 synchronous port.

SPECIFICATIONS

GENERAL

- Flash memory
- Local or network booting
- SNMP (MIB2)
- Reverse Telnet
- Ping utility
- Traceroute utility
- IPX SAP filtering
- Multi-line load balancing
- Alternate tftp boot via network
- Domain name service or network information service
- Single or multiprotocol support selectable on each port
- Novell keep-alive spoofing
- PPP auto detect
- Session idle timers
- Clear channel TCP

SUPPORTED PROTOCOLS

TCP, IP, IPX, SPX, SAP, RIP, SLIP, CSLIP, ICMP, UDP, ARP, telnet, rlogin, PPP (fully compliant: RFC 1331, RFC 1332, RFC 1334; backward compatible: RFC 1171, RFC 1172.)

ROUTING SUPPORT

- Concurrent TCP/IP and Novell IPX routing
- On-demand dial-up routing
- Unnumbered WAN links for TCP/IP
- Static routes
- On-demand, continuous connection, and manual/scheduled dialing
- Dynamic routing using RIP for IP and IPX
- RIP support on a per-interface basis
- Static routing applied if interface goes up/down
- Trusted router RIP filtering
- Support for IP host, subnet and network routes
- Automatic packet queuing and redial
- Proxy ARP

SECURITY

- Local username/password database
- Dialback
- PAP and CHAP authentication
- Inbound/outbound IP and IPX packet filters
- Central authentication via RADIUS protocol
- Per-user authorization filters (source address, destination address, protocol, protocol service [web, e-mail, ftp], status of connection)
- User accounting (audit trails)

ASYNCHRONOUS PORT SUPPORT

- LAN-to-LAN dial-on-demand routing
- Concurrent TCP/IP and Novell IPX dial-in
- Standard dial-up phone lines (using V.32bis and V.34 modems)
- ISDN dial-in via external ISDN terminal adapter (TA)

HARDWARE

- One Ethernet port with three selectable interfaces:
 - Built-in 10BaseT transceiver (twisted pair)
 - Built-in 10Base2 transceiver (thin Ethernet)
 - AUI connector
- 10 high-speed asynchronous ports
 - Up to 115.2 Kbps per port
 - RS-423/232 interface
 - DTR, DSR, DCD, RTS, CTS, TXD, RXD
 - DB-25 connectors
- One synchronous serial port (PortMaster 2R only)
 - Speeds up to T1/E1
 - RS-232 physical interface
 - V.35 physical interface with supplied adapter cable
 - External clocking (from CSU/DSU)
- Dimensions
 - Length: 11.5 in (29.2 cm)
 - Width: 16.8 in (42.7 cm)
 - Height: 3.2 in (8.1 cm)
 - Weight: 12.4 lb (5.7 kg)
- Power Requirements
 - 110 VAC \pm 10%, 47-63 Hz
 - 240 VAC \pm 10%, 47-63 Hz
- Environmental Operating Range
 - Temperature: 41F to 113F (5C to 45C)
 - Humidity: 20% to 80%
- Agency Approvals
 - FCC, UL, CSA



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PortMaster 2E & 2ER

Livingston's Modular Communications Servers Versatile and Expandable Network Connectivity.

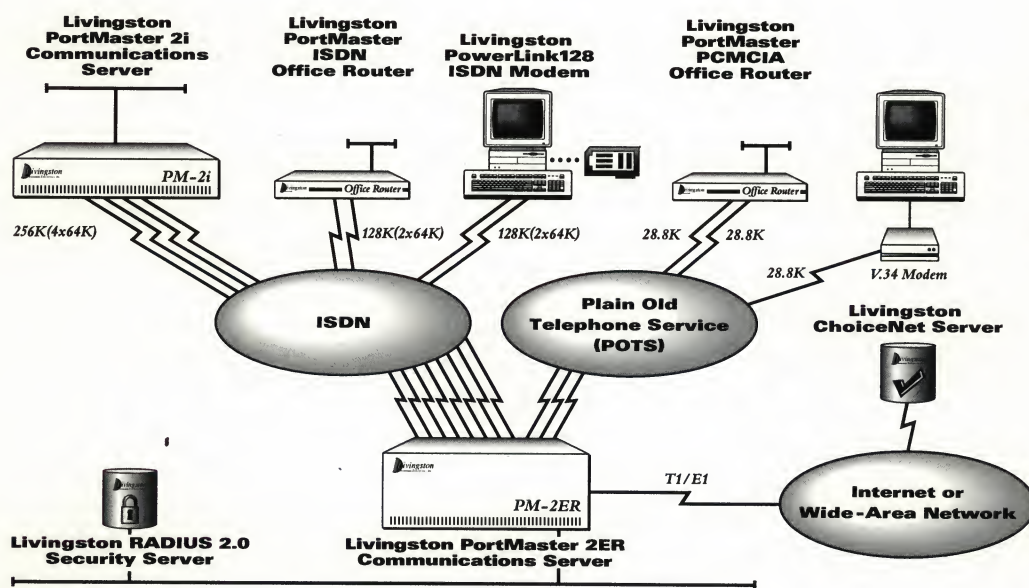


Low-Cost Dial-In Access for ISDN and Analog Services

The PortMaster™ 2E and 2ER Communications Servers are an economical and easily expandable solution for securely connecting telecommuters, Internet users, and branch offices to network resources. These multi-port, multi-service units support user-to-LAN dial-in/dial-out and LAN-to-LAN multiprotocol routing over both analog and ISDN (Integrated Services Digital Network) phone lines.

The PortMaster 2E modular communications server comes standard with 10 asynchronous serial ports or 5 ISDN BRI (basic rate interface) ports and two expansion slots that will accept either two additional 10-port asynchronous modules, two 5-BRI ISDN modules, or one of each.

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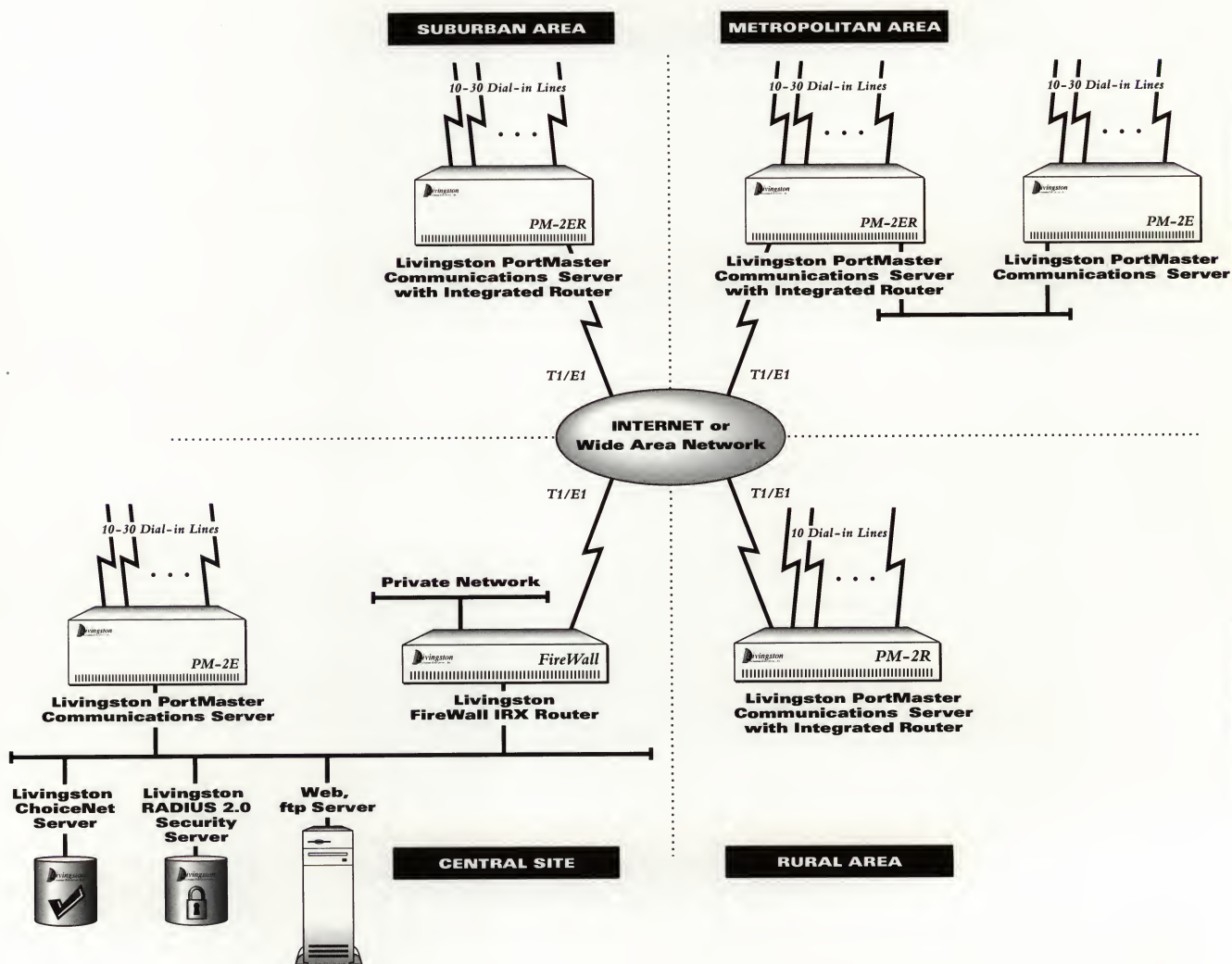
Total Access. Sure and Simple™.

The ISDN modules are available with S/T interfaces or U interfaces with integrated NT-1's (network termination devices). Each of the 5 BRI ports supports two B-channels for a total of 10 64-Kbps B-channels per module. These B-channels can be used as individual ports for dial-in access or can be combined in aggregates of two or more using Multilink PPP (MP).

The PortMaster 2ER Communications Server comes standard with 10 asynchronous serial ports and two expansion slots that will accept either two additional 10-port asynchronous modules, two 5-BRI ISDN modules, or one of each. The PortMaster 2ER also includes an additional T1/E1 synchronous routing port for a leased-line or Frame-Relay connection to an enterprise WAN backbone or Internet Service Provider (ISP). The PortMaster 2ER Communications Server provides an efficient and economical way for ISPs or corporations to provide dial-in access for multiple local points of presence (POPs).

Below:

In this application, Livingston's PORTMASTER 2R, 2E AND 2ER COMMUNICATIONS SERVERS AND FIREWALL IRX ROUTER are used to create a dial-in service with local points of presence using both analog and ISDN lines.



PortMaster 2E and 2ER Communications Server

Easy Internetworking

Both the PortMaster 2E and PortMaster 2ER use Livingston's reliable ComOS™ operating system software. Developed specifically for remote access applications, Livingston ComOS has been continually tested and enhanced since 1989. The most solid and efficient remote-access platform available, ComOS technology is used in all Livingston PortMaster Communications Servers, IRX™ Routers, and PortMaster Office Routers

Like all other PortMaster products, the PortMaster 2E and 2ER support the Livingston-invented RADIUS (Remote Authentication Dial In User Service) protocol for maximum dial-in security. They also feature advanced firewall filtering, which allows you to control exactly what type of traffic can enter and exit the network. And they include Livingston's ChoiceNet™, a centralized filtering technology that enables you to choose which Internet sites, applications and services you wish to make available to your users. The combination of ChoiceNet, RADIUS and our firewall filtering is ideal for building customized Internet service applications.

The PortMaster 2E and PortMaster 2ER are both easy to configure and manage with Livingston PMconsole™ graphical administration software.

SPECIFICATIONS

GENERAL

Flash memory
Local or network booting via tftp
SNMP (MIB2)
Reverse Telnet
Ping utility
Traceroute utility
IPX SAP filtering
Multi-line load balancing
Auto-detect dial-out authentication scripts
Domain name service or network information service
Single or multiprotocol support selectable on each port
Novell keep-alive spoofing
PPP auto detect
Session idle timers
Clear channel TCP
BOOTP

SUPPORTED PROTOCOLS

TCP, IP, IPX, SPX, SAP, RIP, SLIP, CSLIP, ICMP, UDP, ARP, telnet, rlogin, PPP (fully compliant: RFC 1331; RFC 1332; RFC 1334; RFC 1618; backward compatible: RFC 1171; RFC 1172), MP (RFC 1717), V.120

ROUTING SUPPORT

Concurrent TCP/IP and Novell IPX routing
On-demand dial-up routing
Unnumbered WAN links for TCP/IP
Static routes
On-demand, continuous connection, and manual/scheduled dialing
Dial connections support "chat scripts"
Dynamic routing using RIP for IP and IPX
RIP support on a per-interface basis
Trusted router RIP filtering
Support for IP host, subnet and network routes
Automatic packet queuing and redial
Proxy ARP

SECURITY

Local username/password database
Dialback
PAP and CHAP authentication
Inbound/outbound IP and IPX packet filters
Central authentication via RADIUS protocol
Per-user authorization filters (source address, destination address, protocol, protocol service [Web, e-mail, ftp], status of connection)
User accounting (audit trails)
ChoiceNet centralized filtering technology

ASYNCHRONOUS PORT SUPPORT

LAN-to-LAN dial-on-demand routing
Concurrent TCP/IP and Novell IPX dial-in
Standard dial-up phone lines (using V.32bis and V.34 modems)
ISDN (using terminal adapter)
Local and remote console
Dial backup of ISDN WAN ports

ISDN SUPPORT

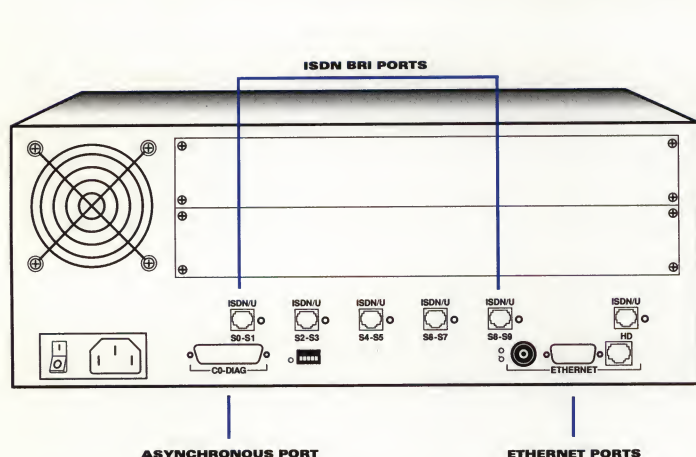
Standards: ITU-T Q.920, Q.921, Q.922, Q.930, Q.931, Q.932
Certifications: NET3/ICTR3, JATE*
Switch compatibility: National ISDN-1(NI-1), AT&T 5ESS custom, Northern Telecom DMS-100 custom, Euro-ISDN (ETSI), 1tr6, German National ISDN, VN4, NTT INS-Net64*, KDD*

Compatible with CSD/CSV services
V.120 ISDN-to-DTE terminal rate adaption
AT command emulation for ISDN dial-out
V.120/Synchronous PPP autodetect
Digital dialtone diagnostics
Multilink PPP with dynamic bandwidth extensions

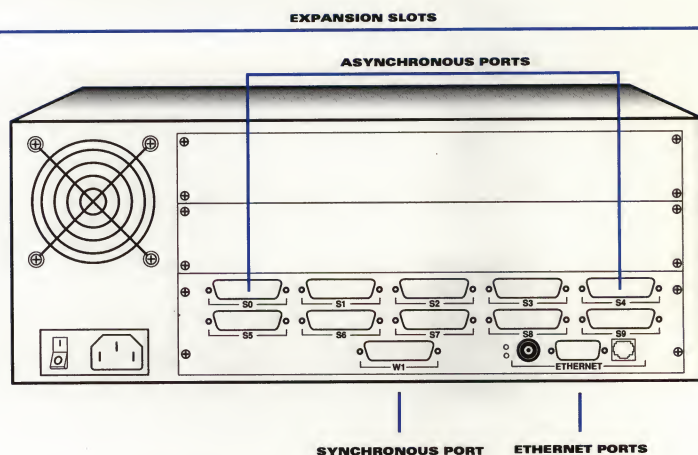
*pending approval

SYNCHRONOUS PORT SUPPORT

LAN-to-LAN routing
Frame Relay
Leased-line services (56K, 64K, fractional T1/E1, T1/E1)
Switched 56 service
V.25bis dialing



Back panel of the **LIVINGSTON PORTMASTER 2E** Communications Server with a 5-BRI ISDN base module (U interface). This product is also available with an asynchronous 10-port base model. The other two slots can be configured with either 10-port asynchronous or 5-BRI ISDN modules in any combination (see examples below).



Back panel of the **LIVINGSTON PORTMASTER 2ER**, which comes standard with 10 asynchronous ports and a T1/E1 synchronous routing port. The two expansion slots will accept either additional 10-port asynchronous modules or 5-BRI ISDN modules (see examples below).

HARDWARE

One Ethernet port with three switch-selectable interfaces:

Built-in 10BaseT transceiver (twisted pair)

Built-in 10Base2 transceiver (thin Ethernet)

AUI connector

10, 20 or 30 asynchronous ports

Up to 115.2 Kbps

RS-423/232 interface

DTR, DSR, DCD, RTS, CTS, Tx/D, Rx/D

DB-25 connectors

5, 10, or 15 (PortMaster 2E only) BRI ports

Per BRI port: S/T interface or U interface (with integrated NT1),
two 64 Kbps B-channels, one 16-Kbps D-channel,
10 B-channels and 5 D-channels per module

U interface only: One high-density (HD) connector for single-cable
connection to punchdown block per 5 BRI ports
(10-foot cable included)

One synchronous serial port (PortMaster 2ER only)

RS-232, V.35, X.21, electrical interfaces

Speeds up to T1/E1

DB-25 physical interface

V.35 physical interface with supplied adapter cable

External clocking (from CSU/DSU)

Dimensions

Length: 11.5 in (29.2 cm)

Width: 16.8 in (42.7 cm)

Height: 6.5 in (16.5 cm)

Weight: 18.9 lb (8.6 kg)

Power Requirements

110 VAC \pm 10%, 47-63 Hz

240 VAC \pm 10%, 47-63 Hz

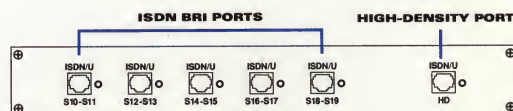
Environmental Operating Range

Temperature: 41F to 113F, 5C to 45C

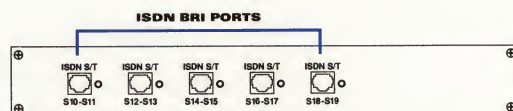
Humidity: 20% to 80%

Agency Approvals

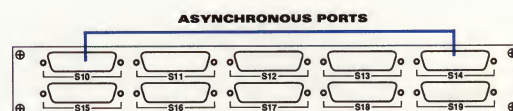
FCC, UL, CSA, CE



Back panel of a 5-BRI ISDN MODULE WITH U INTERFACE.



Back panel of a 5-BRI ISDN MODULE WITH S/T INTERFACE.



Back panel of a 10-PORT ASYNCHRONOUS MODULE.



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